VENEREAL DISEASE IN PEACE AND WAR

WITH SOME REMINISCENCES OF THE LAST FORTY YEARS

BY

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Historical

Venereology has made more progress in the first four decades of the present century than in the previous four hundred years. (Parenthetically no apology is offered for the use of the word "venereology"; for though, strictly, it means the study of venery, the venereal disease specialist should not confine himself to the diagnosis of diseases and the treatment of patients but should study their psychology, enquire into their associations, delve into their minds, and try to discover the motives and circumstances which led to that promiscuity which is responsible for by far the greater amount of venereal disease.) True, Neisser described the gonococcus in 1879, but it was not till 1905 that Schaudinn discovered *Treponema pallidum*, and little was known fifty years ago about such conditions as lymphogranuloma venereum, granuloma inguinale, non-gonococcal urethritis, chancroid, and trichomonas vaginitis (if this is really a venereal disease), while the Wassermann reaction and the various flocculation tests for syphilis had not been dreamed of.

When I started to study clinical medicine in 1908 few cases of acute gonorrhœa or early syphilis were seen in the out-patient departments of teaching hospitals; no doubt many sufferers in London went to the Lock hospital, a few went to private doctors, more resorted to chemists and quacks, but the majority did nothing and hoped for the best or ignored their condition altogether. Those who fell into our hands mostly received urotropin, cubebs, copaiba, or sandal-wood oil, and perhaps a syringing with potassium permanganate or silver nitrate for acute gonorrhœa; and liquor hydrarg. perchlor and potassium iodide orally for most lesions which appeared to be syphilitic. A fellow student, impressed with the results of Bier's treatment for inflammatory conditions, thought he would try it on a case of gonococcal urethritis and told the patient to tie a boot-lace round the proximal part of his penis; the state of the organ when the man reported next day can be better imagined than described; another student who himself had been unlucky in the worship of Venus decided to treat himself; he had heard of silver nitrate as a suitable remedy, so he syringed his urethra with a 5 per cent. solution, a remarkably painful if effective method of treatment!

The surgeon under whom I served was a specialist on the rectum and demonstrated to us from time to time cases of syphilitic strictures of that structure; it is interesting to speculate as to what was really the cause; was it lymphogranuloma venereum? One evening a week each house surgeon at my hospital had a "stricture" session when the "old regulars" attended for the passage of bougies and sounds. What a lot of false passages must have been made in those days, but few of the patients seemed to suffer much harm, though the occasion when the manipulator lubricated the bougie with pure carbolic, which was offered to him in error, will probably long be remembered by both doctor and patient. No doubt many patients with syphilitic rashes, and these were far commoner in those days than now, were referred to skin departments, though this seems the only, and a very poor, reason why syphilis should be considered a dermatological condition. It is no more so than the infectious exanthemata; yet even today there are many places where the two have not been divorced. Syphilis is a generalized disease with protean manifestations of which skin rashes form a relatively unimportant part, and there is nothing dermatological about aneurysms, tabes dorsalis, or general paralysis of the insane, three of the most serious complications.

Army Medical Service, 1914-18

The year 1912 found me in the Army Medical Service and posted to the Military Hospital, Rochester Row, perhaps at that time the leading and most

up-to-date venereal diseases hospital in the country. Here the Wassermann reaction was being carried out as a routine on very large numbers of specimens and with improving technique under perhaps the greatest venereologist in the country, L. W. Harrison, now our " Grand Old Man " of venereology. Here, too, Ehrlich's new remedy, 606, later known as salvarsan, was being assessed and used on a bigger scale than anywhere in Britain. The giving of an intravenous injection of salvarsan required a good deal of equipment, considerable skill and experience, and a certain amount of courage, so that there were few persons sufficiently trained to perform the operation and at that time the fee charged to a private patient for a single injection amounted to a not inconsiderable number of guineas. One day a senior officer on the staff had occasion to return to the hospital unexpectedly in the evening when he met a R.A.M.C. corporal leaving the building carrying his, the officer's, private bag containing the equipment used for giving these injections ! A veil must of necessity be drawn over the *dénouement*, but no doubt the orderly had lined his pockets pretty well before being caught *in flagrante delicto*.

Treatment of Syphilis.—Up to the time when salvarsan came into fairly general use the principal anti-syphilitic remedies were mercury and iodine, though Zittmann's decoction was also employed. Mercury was given as a rule by mouth, by inunction, or by intramuscular injection, the last-named route being the most effective though often decidedly painful, as many of our numerous guardsmen clientele could bear witness. When first introduced, salvarsan was thought to effect cure in one injection, but soon it was found that, unless mercury were used as well, relapse occurred, with the result that the standard treatment adopted was one injection of 606, nine weekly injections of mercury, and then a second one of 606, the 1-9-1 formula ; even this proved inadequate, and the formula was changed to three of salvarsan and ten of mercury (1-5-1-5-1).

Treatment of Gonorrhœa.—At that time little could be done in the treatment of acute gonorrhœa beyond irrigation, usually with permanganate of potash, possibly supplemented by vaccines the value of which was very uncertain ; complications of course were dealt with as they occurred, and such conditions as epididymitis, arthritis, prostatitis, and stricture were common. About this time it was thought that advantage might be taken of the fact that the thermal death point of the gonococcus was very low ; if the urethra could be heated to 39° or 40°C. for an appreciable period, all gonococci should be killed *in situ*. Accordingly various forms of heated bougies were tried, the heat being applied by the passage of a continuous stream of hot water and later by electricity ; a certain amount of success was obtained by this method but in many cases no doubt the heat was conducted away through the tissues too quickly for all the gonococci to be killed.

The World War, 1914-18

In 1913 orders took me to India, where I was soon put in charge of the " section " venereal disease hospital in a large military station. Life was indeed pleasant for a young subaltern ; a self-contained hospital, plenty of clinical material, two very able assistant surgeons to help me, and complete freedom in professional matters. Then came the 1914-18 war, and everyone has heard of the enormous increase in venereal diseases which occurred in the Forces and of the huge hospitals got together in France to deal with the sufferers. In spite of everything that could be done to keep down the incidence—lectures, appeals, prophylaxis, mostly at the instigation of Colonel Harrison, who also had the Herculean task of supervising treatment—the numbers of the infected grew until they finally reached their peak in the Army of the Rhine. Penalties such as deductions of pay or stoppage of leave had little effect, and these have nearly always been opposed by medical officers, and by Colonel Harrison in particular. At one period of the war it was stated that men at home on leave deliberately contracted venereal disease in order to avoid being sent back to the front ; to what extent this practice prevailed was never known, but there is no evidence that it occurred to any extent during the 1939-45 war.

The effect of penalties for contracting venereal disease has always been the subject of much difference of opinion, but it is amusing to note the success attributed to them in reducing the incidence in the Forces of one of the Allies in the 1914-18 war, when it was common knowledge amongst those on the spot that local civilian medical practitioners were reaping a rich harvest by treating soldiers on the quiet ; a good example of the boomerang effect of penalties. These latter have been the subject of much discussion and many regulations in the Army ; for many years some form of official penalty has been exacted from the unfortunate sufferer, such as deductions from pay, loss of leave, and deprivation of amenities and even of " stripes " ; and it is well known that many commanding officers and still more N.C.O.'s set to work to make the sufferer's life more or less of a burden to him. This attitude was particularly prevalent amongst the more senior combatant officers in the first two decades of the present century, but has gradually been replaced by a more broad-minded and, perhaps one might say, more charitable attitude. The advocates of

penalties argued that deterrents were necessary to prevent promiscuity and that punishments and especially financial ones were likely to be the most effective ; the opponents pointed out that penalties inevitably led to concealment—the one thing it was most desirable to avoid, since concealment meant absence of, or ineffective, treatment with consequent greater difficulty of cure and more prolonged invalidity. Many wordy battles were fought over this subject but during the second world war all penalties were finally eliminated, not only from the British but also from the American Armies.

Increase of Venereal Disease Among Civilians

It was after the first world war that the great increase in venereal disease amongst the civilian population of this country occurred ; to meet this increase, civilian treatment centres were set up all over the country in heavily populated areas ; treatment was free and confidential, and before long the incidence of venereal disease began to fall. There can be little doubt that the larger centres, staffed by experienced venereologists, did excellent work, but there were not enough specialists to go round and in the smaller centres, particularly those staffed by general practitioners, results were, as might be expected, not so good. Moreover, standards in the various laboratories where specimens were tested varied considerably, and there were many where the results of the serum tests for syphilis were far from reliable and still more where attempts to culture gonococci met with little success. Conditions were continuing to improve up to the outbreak of the 1939-45 war, then they began to deteriorate rapidly. Allied service men arrived in this country and no doubt brought a good deal of venereal disease with them. Most of the more experienced venereologists were held at their civilian posts and this made things difficult for the armed services, who had to deal quite early with large numbers of patients.

Army Venereal Disease Service.—Some account of the venereology service in the British Army may be of interest here. At the outbreak of the 1939-45 war a consulting " dermatologist," an army euphemism for a venereologist with a knowledge of skin diseases, was sent to France with the expeditionary force, but he proved to be a pure dermatologist with little knowledge of venereal disease, and within a few months an adviser in venereology was appointed to work with him. But from September 1939 until the tragedy of Dunkirk, to the best of my knowledge, no British general hospital in France had a venereologist *officially* on its establishment, though of course medical officers were treating cases of venereal disease.

By November the authorities realized that some central co-ordinating mechanism was necessary, and an adviser in venereology was appointed at the War Office and later raised to the status of consultant. At first this adviser was responsible for skin as well as venereal diseases, but it soon became clear that the two conditions had so little in common that an adviser in dermatology (later raised to consultant) was appointed, and the two worked in close collaboration for the last four years of the war ; this arrangement worked admirably. Experienced venereologists in the Forces at this time were at a premium, but a few were discovered and placed in charge of the larger treatment centres, while keen young officers, a few of whom had had some experience in venereology, were put to train under them. Standards for specialists and " graded " specialists in venereology, a procedure initiated in 1936, were maintained at a high level ; to qualify for the former a medical officer required five years' experience in the subject, and for the latter two years. Officers who had had some previous experience or who were anxious to take up venereology were posted to many clinics as " trainees " and raised to specialist or graded specialist status when they had acquired the necesssry qualifications and were recommended. In this way a very efficient service was gradually built up.

At first modern treatment equipment was by no means generally available, much of the material being out of date. Venereal disease departments were established in the larger military hospitals at home and attached to general hospitals overseas, until before the end of the war the Army venereal disease service was functioning very efficiently. Latterly consultants or advisers were attached to the staffs of D.'s M.S. or D.D.'s M.S. in all theatres of war, and by this means a high standard was attained and maintained. At home " command " venereologists were appointed to each command (England was divided geographically into four " commands," Northern, Southern, Eastern, and Western ; in addition there were London District, Scottish Command, and Northern Ireland District) to co-ordinate and overlook the work within their own commands ; this proved a very successful experiment, more especially as these officers attended conferences at the War Office at regular intervals where various problems were brought up and discussed. At these conferences representatives of the Navy, R.A.F., U.S., and Canadian Forces, and one eminent civilian venereologist, were present ; and in this way views were exchanged and a more or less uniform policy adopted. The consultant at the War Office paid regular visits to all commands and hospitals at home, and from time to time to theatres

of war, thus keeping himself informed of the position in various parts of the world; a visit to Canada and the U.S.A. afforded an opportunity for an exchange of views and for cementing the already good feeling which existed among the Allies.

A very great strain was thrown on the venereal disease services in certain theatres of war at various times, particularly in the early part of the Italian campaign, where gonorrhœa first began to show itself as a sulphonamide-resistant infection, a point which will be discussed in more detail later, but on the whole Medical Officers met their commitments, often under very unfavourable conditions, with skill and resource.

Army Policy

Army policy concerning venereal disease during the 1939-45 war fell mainly under the three heads: (*a*) prevention, (*b*) diagnosis and treatment, and (*c*) observation.

Prevention.—In many respects prevention took pride of place, especially from the general staff point of view, since it was obvious that more men could be kept with their units in fighting trim by prevention than by the most efficient diagnosis and treatment; prevention, too, was by far the most difficult problem, since on the one hand it was impossible to prevent every soldier from exposing himself to infection, and, on the other hand, executive action was inhibited by numerous outside influences. Certain Church dignitaries and others, for example, held that prophylaxis encouraged promiscuity; and fond mothers complained that their sons and daughters were taught too much about sex and venereal disease. Also, there were many complaints from those who said their sons were taken from home and sent overseas to live and fight where vice was rampant without being provided with the information and the means of resisting temptation and infection. It will be realized, therefore, that the Army authorities had to try and steer a middle course, to please everybody and offend nobody, a difficult and thankless task.

There were two main methods of prevention: (1) lectures, including talks by both medical and combatant officers, films, posters, etc., and (2) chemical and physical prophylaxis. A standard lecture was drawn up and issued as a guide to all medical officers; this was couched in the most moderate terms and indicated what venereal diseases were, how they were acquired, and how they could be prevented; it laid most stress on the necessity for continence and of the duty of the soldier to keep himself fit for the sake of his country, his family, his unit, and his honour; talks by unit officers and N.C.O.'s were also encouraged because it was agreed that the incidence of venereal diseases in a unit reflected its degree of discipline and efficiency: numerous instances came to hand showing that venereal disease was always more prevalent in a slack, ill-disciplined unit than in a smart one. Most people nowadays agree that education, particularly sex education, is the most important plank in the anti-venereal-disease platform, but it must be remembered that education is a long process and should start in boyhood and adolescence, whereas in the Army we had the grown man to deal with and little time or opportunity for effective education.

Few objections were raised to this aspect of prevention, but when it came to prophylaxis many battles were fought. On the one hand there were those who favoured every possible form—the provision of condoms and prophylactic antiseptics, the setting up of prophylactic centres, the giving of curative drugs such as the sulphonamides, and even the institution of military brothels where the inmates could be examined and their clientele given compulsory disinfection. However, many, and this was mainly true of senior combatant officers, favoured various forms of penalty for any man who contracted venereal disease unless he could prove he had employed some form of personal disinfection, unless for example he could produce a ticket showing that he had attended a prophylactic centre. The penalties varied in kind and degree, and included loss of proficiency pay, extra fatigues, withholding of leave, loss of acting rank, and even expulsion from certain units. The protagonists of penalties failed to see how illogical it was to penalize a soldier for contracting venereal disease when his fellow who had run the same risk and had been lucky enough to escape infection got off scot-free; they also failed to take account of the fact that such measures tended to drive the disease underground and encourage concealment, just the very things that most people agree should be avoided in all diseases and most of all in venereal disease. It took much hard work to persuade the authorities that penalties defeated their object, but it was accomplished in the end.

On the other side there were those who held that the provision of prophylactics encouraged fornication not only by removing the fear of contracting venereal disease but by suggesting that the authorities condoned or even encouraged promiscuity, by putting the idea of fornication into the soldier's head and generally by lowering his morals. A course somewhere between the two therefore had to be adopted.

Prophylactic Centres.—Prophylactic centres were set up, usually both in the unit and at certain points

where large numbers of troops were collected ; the former were normally provided with the means whereby a soldier could disinfect himself, whereas the latter were staffed with skilled instructors who either showed the man how to disinfect himself or actually carried out the disinfection. This process consisted of thorough washing with soap and water followed by inunction of an ointment or cream containing oxycyanide of mercury and calomel cream; a little of this latter was usually inserted just inside the urinary meatus. Prophylactic packets contained a tube of this material with a small amount of cotton wool and soap, so that a soldier could disinfect himself, if necessary, at any place where a supply of water was available. At some prophylactic stations tablets of one of the sulphonamides, usually sulphadiazine, were available, and the man was given 1 or 2 g. to take at once and another 1 or 2 g. to take some hours later—usually the following morning. Such a procedure was never instituted in the British Army, but as British troops occasionally attended Allied prophylactic stations no doubt some of them received sulphonamides. The pros and cons of this particular method were weighed very carefully but the disadvantages appeared to outweigh the advantages.

The question of the official recognition of condoms proved a thorny matter. Many people objected to them on the grounds that they encouraged promiscuity, whereas others pointed out that their intelligent use was probably the most effective single measure calculated to prevent infection of a man who indulged in sexual intercourse with an infected woman. No doubt there was much to be said on both sides, but in war the prevention of infection is paramount and some of the objections were got over by making condoms " available on request " rather than by issuing them ; in some units a man could get them from a slot machine, and during the latter part of the war he could always obtain them from a prophylactic station ; condoms may have been bad for a man's morals but they certainly prevented a great many infections. It is an interesting fact in this connexion that the Royal Navy has usually been able to take what action it liked, without undue comment being made, (such, for example, as issuing prophylactic packets,) whereas War Office action has been subjected to criticism and objection from many quarters ; certainly the Navy seems to be much less influenced than the Army by public opinion as represented by Ministers of religion, morality societies, parents of service men, etc.

Brothels.—These institutions have existed almost as long as society and have been the subject of endless discussion ; there can be no doubt that they are almost universally abhorred throughout this country by members of every class and creed, but this does not apply to certain countries on the continent of Europe nor to many Eastern countries where they are officially recognized. British opinion condemns them, and no doubt they are degrading to their occupants and an encouragement to immorality on the part of those who patronise them. That they are necessarily potent sources of infection by no means follows. In the early days of the war in France I paid numerous official visits of inspection to the local brothel which was well conducted, clean, and cheerful ; each inmate was medically inspected regularly (not that this in itself means much), always insisted on the use of a condom, and, if reported to have been the source of infection, was specially re-examined and if found infectious removed to hospital and treated till no longer so. Such an institution may have been morally bad, but undoubtedly it saved many soldiers from contracting venereal disease.

At Algiers I was conducted round numerous brothels by the Assistant Provost Marshal ; these were officially out of bounds but nevertheless were well patronised ; relatively few infections were traced to them (partly because a prophylactic station had very wisely been set up nearby) compared with the large number caused by clandestine prostitutes.

Two interesting happenings occurred on this tour : one soldier complained to me that he had been " turned down " because he appeared to have a discharge, whereas it was only some of the antiseptic cream he had got from a prophylactic station, " and could I explain to Madame ? " who spoke French but not English ! I pointed out to another that a brothel was hardly the place for a married man, at which he demurred, but when I asked him what he would think if he knew his wife was doing the same at home he expressed considerable resentment—a not very logical attitude!

Let it not be supposed that I am in favour of brothels. However, a titled lady in a very important position overseas explained to me that she could not understand why the military authorities did not run brothels officially and so save a lot of trouble ; and, though it may not be generally known, many a young woman on the continent has collected her dowry in a brothel and subsequently proved an admirable wife and mother. So much depends on circumstances. In war, prevention of venereal disease is paramount, and since we have not yet reached the stage when we can alter human nature and since some men will be promiscuous no matter what is done, brothels are a far less likely source of infection than clandestine prostitutes. These latter

must account for a very large percentage of venereal disease, certainly overseas, and no satisfactory method of dealing with them has yet been devised; registration has been proved useless, and nearly 100 per cent. become infected sooner or later. The simple closure of brothels by ordinance only accentuates the trouble, for the women are merely thrown on the streets, with few or no facilities for personal hygiene, unless effective steps are taken for their rehabilitation. It is only too easy to advocate the abolition of brothels, but there are not many countries where such a policy has been carried out effectively; it is truly said that you cannot legislate ahead of public opinion—at least not in a democracy.

Nevertheless British Army policy throughout the last war has been to aim at prevention by discouraging promiscuity; to tell the soldier it was unmanly, unsoldierlike, and unpatriotic, to appeal to his better nature, to provide other outlets for his energies—games, clubs, cinemas, etc., but when he had exposed himself to infection to encourage him to practise effective prophylaxis at the earliest possible moment; and it can be said with confidence that the incidence of venereal disease in the British Army was probably considerably lower than in that of any of the allied Armies, and certainly much lower than in the German Army. The incidence in the Russian Army was claimed to be very low, but no actual figures were available, and no doubt the U.S.S.R. authorities had their own methods, perhaps drastic ones, for dealing with a matter which was described to me by a high ranking Russian officer as "no real problem"; rumour had it that in one army in south-east Europe an attack of venereal disease meant the attentions of a firing squad!

The subject of the incidence of venereal disease cannot be left without reference to the A.T.S.; these women had a marvellous war record; at no time was the incidence of venereal disease among them anything but very low and at many times and in many units it was non-existent or negligible; a great meed of praise for an efficient service and for the womanhood of this country who worked and fought under difficult conditions and often subject to great temptation.

Organization of Diagnosis.—Just previous to the 1914-1918 war British Army venereology led the country; at Rochester Row Military Hospital the new remedy 606 was being used on a considerable scale on numerous patients, whilst the volume of pathological work, including examinations for spirochætes and Wassermann reactions, was probably greater than in any other institution. This was carried on up to and throughout the war and for several years afterwards, under the able direction of L. W. Harrison; it was not until about 1920 that efficient civilian clinics staffed by experienced venereologists began to spring up in most of the larger centres of population. This scheme laid the onus of providing a venereal disease service on local authorities, and gradually practically the whole country was covered; the service on the whole worked smoothly and efficiently, and the high rate of incidence of new cases of venereal disease gradually fell during the succeeding years mainly as a result of free and confidential treatment rendering large numbers of patients non-contagious and so breaking the chain of infection. By the late nineteen-thirties venereal disease seemed to have been brought under control, and British rates compared very favourably with those of most other countries and were better than any with comparable density of populations. Then came the 1939-45 war. Meanwhile the standard of venereology in the Army had not kept up with the advances in civil practice; partly no doubt due to lack of stimulus resulting from the passing from war to peace, partly due to loss of experienced medical officers and the lack of others to replace them, and partly perhaps to economies.

Certain it is that at the outbreak of war in 1939 there were very few experienced regular military venereologists available, the routine arsenical used in the treatment of syphilis was sulpharsphenamine, and some of the instruments and much of the equipment provided had become out of date. The authorities quickly realized the danger, and it was not long before a really efficient Army venereal disease service was functioning, as has already been described; conditions continued to improve throughout the war but deteriorated somewhat after hostilities ceased, when many of the best venereologists were demobilized. Venereal disease rates inevitably rose amongst troops in the armies of occupation, just as they did after the first world war. Amongst troops at home the rates remained relatively low throughout the war, though overseas naturally they tended to be somewhat higher; nevertheless the position never got out of hand, except perhaps in the one instance of the early part of the Italian campaign already mentioned, and even here conditions would not have been so bad had penicillin been released for the treatment of gonorrhœa; it may have been good policy to reserve all available supplies for wounds and other non-venereal conditions from the point of view of public opinion, but it was not so as regards available man-power. Thousands of cases of sulphonamide-resistant gonorrhœa cluttered up the hospitals; large numbers of these patients were suffering from severe complications such as epididymitis, prostatitis, and arthritis, and they occupied badly needed hospital beds besides

requiring much medical and nursing attention.

The introduction of Allied troops into this country no doubt brought in a good deal of venereal disease, but it also brought an effective medical service; and the excellent liaison which was quickly established with our visitors, coupled with the admirable one which existed from the beginning and throughout the war with the civil authorities, did much to lessen the burden of the military organization. At an early stage the use of civil clinics for the treatment of troops was offered and accepted, but before long it became clear that such a scheme would not work, not because of any lack of good will on the civil side, but because of a variety of reasons too numerous and complicated to be gone into here.

As Army facilities developed, all venereal disease in soldiers was dealt with by military venereologists, the majority of whom had been civilians a short time before. No *ad hoc* military hospitals were set up, but venereal disease departments were parts of large hospitals just as much as ophthalmic departments, and thus the stigma which has always attached to venereal disease hospitals was avoided. The intention was to avoid branding the sufferer, and there is no doubt that the venereal disease patient in the 1939-45 war received more consideration than he had ever done before. There were still those of the old school who regarded him as a leper and who even tried to treat him as such, but this attitude was strongly discouraged by those in authority, not least by the D.G.A.M.S. and the Matron-in-Chief; it would have shocked some of the matrons of fifty years ago to know that ladies of the Q.A.I.M.N.S. actually tended male venereal disease patients, though of course most of the routine nursing was done by male orderlies. In spite of considerable opposition by some officers commanding hospitals these patients used the same dining rooms as others, received their shares of gift parcels, used the same canteen, and were even visited by those welcome ladies who run hospital libraries. All this was a great advance and did much to remove the feeling of guilt and inferiority, or on the other hand the attitude of aggression or resentment exhibited by so many of these men, and at the same time it probably decreased the tendency to concealment of disease or refusal of treatment. The excellent liaison between the Allies enabled problems to be discussed on a wide basis, each Ally profiting by the experience of the others, and soldiers of different nationalities and different services were admitted to hospitals of all nations whenever it was most convenient. The venereal disease departments of military and general hospitals were brought up to the standard of the best civil clinics both as regards staff and equipment, with the added advantage that plenty of beds were available so that it is not overstating the case to say that the soldier who contracted venereal disease was in an infinitely better position than the civilian who did so. All venereal patients with active disease were admitted to hospital and retained there so long as they were considered contagious; subsequently they attended as out patients, just as they would have done as civilians.

Diagnosis.—The highest standards of diagnosis were insisted on; gonorrhœa could not be diagnosed unless the gonococcus was demonstrated in either film or culture, and for a diagnosis of syphilis *Spirochæta pallida* had to be demonstrated by dark-ground illumination (not by means of fixed specimens) or serum tests found positive to an extent which would rule out false reactions; smears and dark-ground examinations were done in venereology departments by officers or skilled trained orderlies, as should always be the case; there should be no need to send such specimens to a laboratory, nor is such a procedure desirable; every venereologist ought to be capable of recognizing the infecting organisms, and with experience should be at least as adept at demonstrating them as the average general clinical pathologist; not only that, but practice on the pathological aspect of these diseases maintains the medical officer's interest and widens his outlook. Cultural investigation was available in the laboratories attached to most hospitals, while serum tests for syphilis, such as the Wassermann and Kahn, were usually carried out at one of several large central laboratories. In some cases Kahn tests were done locally, particularly when a quick result was required, but I believe more accurate results are obtained when large numbers of tests are carried out in big batches by a few highly skilled pathologists than when small batches are tested in numerous laboratories by less experienced workers; not only this, but more uniform results are obtained. It seems to me that these advantages more than offset the disadvantages of slight delay, of centralization, and of divorcing the serological from the clinical side.

Mention need hardly be made of soft chancre, since the condition proved very rare at home during the 1939-45 war, particularly as compared with the previous one. Lymphogranuloma venereum and granuloma inguinale were hardly ever seen at home, and they nowhere affected British troops to any appreciable extent.

Non-gonococcal urethritis tended to increase as the war went on, certainly relatively to gonorrhœa, if not absolutely, and in some Forces and in some areas it proved the most difficult of all the venereal diseases to manage. It is not included in the

official list of venereal diseases, but I always argued that if it was acquired in the same way as the recognized venereal diseases, that is, by promiscuous sexual intercourse, it should be labelled venereal. Most British venereologists labelled this condition "venereal" or "non-venereal" according to how it was presumed to have been acquired. No doubt there were various causes, microbial, viral, chemical, and traumatic; some cases may even have been Reiter's disease. As a rule the condition was resistant to treatment, particularly when complications were present, and the incidence in some places was equal to or greater than that of gonorrhœa. How far self-treatment, resort to quacks, or use of over-strong chemicals in prophylaxis were responsible we shall probably never know.

Then there is the problem of trichomonas vaginitis infestation, rare in males, but common in females. This condition, though usually treated in venereal disease departments, should not be called venereal except where the evidence points to its having been acquired venereally; since if it is usually so acquired why is it hundreds of times more frequent in females than in males, and how do virgins get infected?

Treatment of Gonorrhœa.—Fortunately the sulphonamides were available when war broke out and their use saved many hospital days and much labour at a time when facilities and equipment were lacking; no longer the six or more weeks' stay in hospital with irrigations twice daily and frequent complications which prolonged disability, involved many weeks in bed, and often taxed the skill of the most experienced clinicians. It was some time before sulphonamide-resistance was noticed, and most patients could be discharged in a week or ten days.

Opinions differed about dosage. Some medical officers claimed the best results with a very short intensive course (22 g. in 48 hours), others with a relatively small daily dosage over a period of a week or ten days; most preferred something in between, such as 4 g. a day for five days. Those were the days of sulphanilamide and sulphapyridine; later when sulphathiazole and sulphadiazine became available, a Medical Research Council sub-committee recommended either 5 g. a day for four days or 4 g. a day for five days. Side-effects were on the whole uncommon (except for the feeling of depression caused by sulphapyridine) and mild; a few cases of anuria due to blocking of the ureters occurred, but most of these were successfully dealt with and deaths were rare. Explicit instructions were issued to all medical officers to keep a sharp look out for toxic effects and to take all precautions.

Sulpha-Resistance.—After a time and in certain particular areas sulphonamide resistance began to occur, and this caused much embarrassment until penicillin became available to overcome this difficulty. It is interesting to speculate on the reasons for sulphonamide resistance; no doubt more than one factor is involved, but three appear to be outstanding: (1) susceptible strains of gonococci were being increasingly killed off, whilst insusceptible ones survived and therefore increased relatively; (2) susceptible strains gradually became insusceptible due to the effect of prolonged but low dosage of the drugs; (3) some defect in the patient's tissues. It seems likely that the second factor may have been common in the case of prostitutes, who dosed themselves more or less regularly with small amounts of the drug; and the knowledge, which soon became fairly general, that sulphonamides cured gonorrhœa besides other conditions, enhanced their value till a single tablet was worth a shilling or even more and they became almost currency just as did cigarettes at a later stage. Thus a great temptation was thrown in the way of orderlies and others who had access to supplies. Before long it became necessary for these substances to be obtainable only on a doctor's prescription and to keep hospital and clinic supplies locked up and checked from time to time; in spite of all this a black market came into being. Actually the treatment of gonorrhœa in the soldier, with a few notable exceptions, proved no great problem, though naturally the numbers of cases were considerable; urethroscopes, sounds, dilators, and most of the instruments so commonly used in the past almost fell into disuse except as required for tests of cure.

Penicillin, when it became available, proved most effective for gonorrhœa; 100,000 to 200,000 units in watery solution given as two, three, or four intramuscular injections cured 90 per cent. or more of early acute cases, and later a single injection of 300,000 units in oil-wax accomplished a similar result; the antibiotic seemed less successful in the treatment of complications, particularly when there was a closed focus, but its employment greatly reduced their incidence, particularly that of prostatitis, which was so common in the old days. How long the use of a comparatively small dosage for gonorrhœa might delay the development of a concurrently acquired syphilis has not yet been determined, but it has been our policy to keep all patients treated for gonorrhœa with penicillin under observation for syphilis for at least six months. Whether it is a better plan to try the effect of sulphonamides on cases of gonorrhœa and avoid penicillin unless these fail is a moot point; much depends on circumstances, for example whether the patient is to be relied on to attend for periodic blood tests, but there is much to be said in its favour, since inadequately treated syphilis is potentially very dangerous.

Treatment of Syphilis.—The treatment of this disease presented a far greater problem ; a patient with gonorrhœa could be admitted to hospital and discharged cured in ten days or less, but with syphilis long-term treatment was deemed necessary and is still so deemed by many. Every patient was admitted to hospital and treated there so long as he was considered infectious and until superficial lesions had healed ; then came the question of follow-up treatment ; for early syphilis it was originally laid down that the minimum treatment was three courses—each consisting of ten injections of an arsenical and ten of bismuth—after a negative serum test had been obtained. Such treatment, with the necessary intervals between courses, occupied the greater part of one year.

Unfortunately soldiers in war were constantly moving from place to place and so were not available to receive all their treatment at one centre. Great difficulties arose in ensuring regularity and continuity of treatment in such cases, and despite all efforts many failed to attend for their weekly injections. It was often very difficult to know whom to blame, the C.O. and staff of the unit, the unit medical officer, or the man himself. Some commanding officers were very co-operative, others less so. As a rule if the man himself were anxious to complete his treatment lapses were few, but if he were not those responsible often failed to realize the importance of regular attendance. Moreover, the movement of a man from one unit or station to another involved a great deal of paper work, and correspondence often lagged behind the man. What was not generally realized sufficiently was that responsibility lay with the C.O. rather than the M.O., but it has always been invidious for the medical side to appear to issue instructions to the combatant side. One way of reducing the defaulter rate consisted in the provision of a small case book, similar to the civilian V 15, which was specially designed to fit in the soldier's pay book so that he always carried with him a document giving all necessary details of diagnosis, treatment received, and treatment to be given, together with necessary observation ; when the soldier himself was co-operative this system worked extremely well, but as will be readily realized not all patients were co-operative and many concealed, failed to produce, or lost these little books. It was customary for soldiers to retain these when they returned to civil life, and no doubt they have been helpful to medical officers of civil treatment centres. Towards the end of the war when demobilization was under consideration it was decided that, when a soldier under treatment or observation returned to civil life, notification, *with his written permission*, would be made to the medical officer of health of the district in which he proposed to live. How effective this procedure was is difficult to estimate.

The actual treatment of patients, that is, the giving of injections, was invariably carried out by, or under the direction of, a venereologist ; and orderlies were never permitted to give arsenical or other intravenous injections, though they might take samples of blood and if sufficiently experienced give intramuscular injections. Considering the large number of cases of syphilis and the vast number of injections given, accidents and side-effects were relatively few, with the exception of cases of arsenical encephalopathy in one country overseas and a period at home when post-arsenical jaundice (see below) gave cause for considerable concern. No doubt this happy state of affairs was to some extent due to the fact that the majority of patients were young otherwise healthy men, but much credit is due to the skill and care exercised by venereologists and orderlies. Owing to the fact that so many patients failed to complete their treatment with regularity, various methods at various times were introduced to shorten the period of treatment.

" Intensive " arsenical treatment was never officially blessed or encouraged in the British Army, but large numbers of American soldiers were treated on these lines ; for example, treatment was compressed into a few months, weeks, or even days. The British Army authorities considered such methods as too dangerous and relatively ineffective, and it seems at least doubtful whether they presented, in general, any great advantage over the longer methods ; the saving of time, which did not necessarily mean much saving of man-days since on the British system a man after his initial treatment in hospital was only away from his unit normally for a few hours whilst attending for treatment, was to a large extent offset by the increased risk and the longer occupation of a hospital bed. It is by no means certain that the ultimate results of treatment by intensive or semi-intensive methods were any better than, or even as good as, those following long-term treatment, even when the latter was incomplete or irregular, provided that the patient completed the first course (5·85 g. of neoarsphenamine and 2·5 g. of bismuth metal). This was ensured to a very large extent by a rule that a soldier under treatment for early syphilis should not be sent overseas within three months of starting treatment. It has been the experience of many that the first course is the most important, and that if this is completed according to schedule subsequent irregularity of treatment is less likely to prejudice the chances of eventual cure. Excluding penicillin, which will be discussed later, the " five-day " intensive

treatment with mapharsen (mapharside) had to be abandoned owing to the high mortality rate which was something like 1 in 200; the "twenty-day" treatment seems to have given good short-term results, but it will be some time before we know what the long-term ones are, and though the Americans reported very few deaths, moderate to severe reactions were not uncommon and frequently treatment had to be stopped or modified chiefly on account of "secondary fever." It required a good deal of judgment and experience to know how and when to deal with side-effects, and skilled nursing was essential; these things were not always generally available, particularly in the fighting areas. The "twenty-six-week" treatment seemed effective but occupied a longer period than two British Army courses, whereas three of the latter, which could be completed in thirty-five weeks, constituted "adequate" treatment for sero-negative primary syphilis. Moreover mapharsen (or mapharside), so popular with the Americans, had to be given twice or even three times a week, if optimum effects were to be obtained, compared with once a week for neoarsphenamine, and it was never officially adopted as the arsenical of choice for the treatment of British soldiers. The mere fact that the use of mapharsen entails two or perhaps three attendances weekly instead of one in the case of neoarsphenamine is an argument against it, since in both service and civil life every extra attendance means loss of time for the patient and more work for the treatment centre, and increases the likelihood of irregular attendance. There is plenty of evidence that 0·06 g. of mapharsen causes far fewer side-effects than 0·6 g. of neoarsphenamine, but these are not comparable doses; probably three of the former are required to produce therapeutic effects equal to one of the latter, and much more time and trouble are involved for both doctor and patient.

Penicillin for Syphilis.—The introduction of penicillin for the treatment of syphilis at the end of 1943 seemed likely to solve the problem. As few as 600,000 units caused lesions of early syphilis to heal rapidly and appeared to bring about cure. Soon, however, relapses began to occur, and these were by no means eliminated when the dose was stepped up first to 1,200,000 units, then to 2,400,000 (which was the approved dose for a considerable time), and then to 4·8 or more million units. The antibiotic, which had been hailed with as great enthusiasm as was salvarsan, failed to do all that was hoped of it, though the fact that it is almost free from toxicity and that purer and more effective preparations are constantly becoming available still makes it the most useful single remedy for syphilis. Nevertheless in the British Army it was decided almost from the first not to rely on penicillin alone for the treatment of early syphilis but to supplement it with at least one course of arsenic (5·85 g.) and bismuth (2 to 2·5 g.); in this way the treatment of early syphilis could be completed in as little as nine weeks, and so far results have been excellent.

Treatment of Late Syphilis.—The number of cases of late, latent, cardiovascular, and neurosyphilis seen in the Forces was relatively very small, but treatment of these has always been individualized; it seems very doubtful whether penicillin alone constitutes adequate treatment of these conditions, though it appears very effective in neurosyphilis, except perhaps in the parenchymatous forms. In these latter there has been much controversy as to whether penicillin is as effective alone as when it is given in conjunction with artificial fever. In general paralysis of the insane penicillin so often brings about such a marked improvement in the general condition of the patient that malaria can be given with comparative safety; and in such cases, and also in persons who are physically fit when first diagnosed, it seems a pity to withhold a form of treatment which has given such remarkable results in a condition formerly invariably fatal. There is no proof that the two methods of treatment are antagonistic to one another, so that if one has two barrels to one's gun it seems unwise not to use them when a "kill" is so important; few will deny that fever plus penicillin is the optimum treatment for syphilitic optic atrophy, and one rather suspects that the desire of some to avoid the use of therapeutic malaria is, in part at least, due to lack of skill and experience in applying and controlling it. Evidence seems to be accumulating to show that penicillin alone is by no means always effective in late, for example, tertiary, syphilis, no matter how large the dosage; long-term treatment has always been necessary for such cases, and there is no reason to suppose that short-term methods will be effective with the remedies at present available.

It is curious, but none the less obvious, that penicillin, in spite of its very marked spirochæticidal properties, does not seem as effective as the arsenicals in reversing positive serum reactions; this is not a matter of great moment in late syphilis, but in the early forms every clinician likes to see reactions become negative in the shortest possible time and rapid reversal is generally considered to indicate efficacy of treatment. As to how penicillin should be given, whether frequently in aqueous solution or less frequently in an absorption-delaying vehicle, is not yet settled. Many think that a moderate, steady blood concentration is superior to a series of high

peaks alternating with almost complete absence of the substance from the blood. Comparison with the effect of penicillin on most other organisms, such as pneumococci or gonococci, is obviously impossible, since these latter organisms multiply very rapidly, whereas it appears that spirochætes do so very slowly. Seeing that organisms are usually most vulnerable when they are very young, it might be assumed that the aim of treatment should be to catch the spirochæte when it has just divided. We know that both penicillin and arsenicals usually kill most of these organisms almost at once but that an odd 1 or 2 per cent. survive; it seems, therefore, that, *a priori*, repeated penicillin courses should be more effective than single ones; moreover, there is a consensus of opinion that a given total dosage is more effective if spread over ten to fourteen days than over seven and a half. The changing character of penicillin, its greater purity, the elimination of undesirable fractions and impurities, variation of vehicles and a host of other considerations, have so far militated against any routine method of administration being accepted for long, and years will probably elapse before agreement is reached as to the best method of using it, just as has been the case with the arsphenamines. A good example is the experience of many syphilologists during 1945, when it was realized that results of treatment were becoming inferior to what they had been previously, which was eventually explained by the fact that commercial preparations of penicillin were being produced which contained increasing amounts of the K fraction, which is relatively ineffective against the spirochæte.

In spite of what has been said, there are many who still pin their faith on penicillin alone, notably in the U.S.A., though opinion in this country, and policy in the Army, strongly favours reinforcement with other remedies. Nearly everyone in Britain uses bismuth as well, though there is a growing feeling in favour of dropping the arsphenamines. In this latter respect there is reason for difference in policy between the civil and service sides; the civilian patient is on the average considerably older than the service man, is less generally physically and constitutionally fit, and does not receive such an adequate diet, so that he is obviously much more prone to suffer from the side-effects of an admittedly toxic drug. Moreover women tolerate arsenicals less well than do men, and the proportion of women patients to men is much higher in civil life than in the services. Other factors, too, have to be taken into consideration. The service man with syphilis, in contrast to the civilian, is invariably admitted to hospital, usually for a week or ten days at least, needs to be rendered fit in the shortest possible time, especially in time of war, and attends for continuation treatment during working hours whereas the civilian usually goes to the clinic in his spare time. These and other factors tend to cause differences in the estimate of what is the best treatment for the two types of case. Another point which has to be borne in mind is that, speaking broadly, the civilian venereologist is older and more experienced than his service opposite number and can therefore bring a more balanced judgment to bear; he can treat each case on its merits, whereas it is obviously desirable in the Forces to standardize the treatment of early syphilis so far as is practicable, not only because many service venereologists are relatively inexperienced but also because they usually have to cover much greater areas, and they work under less favourable conditions and with fewer facilities for consultation and pathological examinations. Moreover in a service the greater the standardization the better the machine works, other things being equal, whether it is a question of arms, rations, or vehicles.

It is possible, even probable, that the longer the period over which the treatment of syphilis is spread the greater is the chance of permanent cure, and it is certain that reinfection, now causing so much concern where short intensive forms of treatment are the vogue, is absolutely or almost entirely prevented so long as antisyphilitic remedies are present in the patient's tissues. We know that bismuth is very slowly absorbed from a depot in the gluteal muscles, and when 2 to 2·5 g. of bismuth metal have been injected intramuscularly over a period of nine weeks it is probable that the host is protected for weeks, perhaps months, after the last injection has been given; the fact that bismuth does protect from infection has been proved by injecting prostitutes prophylactically. Reinfection has come much into the picture recently, particularly in patients treated with penicillin; the differentiation of reinfection from relapse is always very difficult and often impossible, and failure to decide between the two renders assessment of different schedules of treatment equally difficult just when it is most important that we should know whether a given course of treatment is really effective. At the present time there seems no likelihood of relying on penicillin alone for the treatment of service patients; not only is it essential, more especially in time of war, that every soldier should be rendered fit as quickly as possible and kept so; in order to maintain man power, but that the services are much more sensitive to public opinion than civilian organizations. Fathers and mothers soon complain if their sons do not receive the best possible care, whereas neither the patient who attends a civil treatment centre nor his relations are likely to draw attention publicly to his ailment if things do not go as smoothly

as could be wished ; further, the medical officer of a civil centre can do as he pleases and few will be able, or will care, to criticize him ; but service venereologists constantly have senior officers metaphorically looking over their shoulders, and the Adjutant General always calls for an explanation if the medical services do not do their job as well as they should. For all these and other reasons the management of syphilis in the services is always likely to err on the side of over- rather than under-treatment.

Treatment of Chancroid.—The treatment of chancroid calls for little comment, partly because this disease was infrequent during the 1939-45 war ; sulphonamides will bring about cure in a week or ten days in most cases : it has even been said that if they fail the diagnosis should be reconsidered. When and if they do fail, we now know that streptomycin is almost certain to be effective. It is a curious fact, which so far as I know has never been explained, that soft chancre, which was relatively common in England in the first decade of the present century, is now a comparative rarity.

Non-gonococcal Urethritis.—Of the other venereal disesases non-gonococcal urethritis has proved the most troublesome ; not only has it become, certainly relatively and probably absolutely, more common of recent years, but its treatment has been most unsatisfactory. The causation of very many cases is still unknown ; no doubt there were in the past many cases due to infection with normally banal organisms as a result of poor asepsis, use of overstrong chemicals in local treatment, and other similar causes ; but there remains a large residuum where the infecting agent cannot be identified. Many and various forms of treatment have been tried, and perhaps the most successful in recalcitrant cases has been artificially induced fever, but such methods carry risks and cannot be employed except on a relatively small scale. Much more investigation will have to be carried out before this problem is solved ; in this connexion it has always been a source of wonder to me why, when one considers what a veritable menagerie of organisms the vagina contains, non-gonococcal urethritis, " husband's clap " as it is sometimes called, is not much more common.

Toxic Effects.—Of the side-effects of antisyphilitic treatment only three call for more than passing mention.

Dermatitis.—Dermatitis, and particularly the exfoliative form so much dreaded in syphilis clinics, occurred comparatively rarely in the Forces during the war and fortunately, due to some very valuable investigations carried out in connexion with war gases, BAL (di-mercapto-propanol) was found to be an effective antidote. The first cases treated with this remedy in this country were soldiers, and though results were not invariably perfect they were so good that the condition has lost much of its terrors.

Encephalopathy.—Arsenical encephalopathy was rare during the war with the exception of a big outbreak in the East where nearly two hundred cases occurred, with numerous deaths. There seems little doubt that the explanation lay in the peculiar susceptibility of certain Indians to arsenic. Apart from this the condition was mainly seen when arsenicals were employed in very intensive courses, and few nowadays consider that such forms of treatment are justifiable.

Jaundice.—Post-arsephenamine jaundice, so-called, was the chief cause of concern. Relatively uncommon before and during the early part of the late war, it gradually became so common in army venereal disease treatment centres that as many as 50 per cent. of soldiers attending for antisyphilitic treatment developed it. Fortunately few cases were fatal, but the numbers were so large and the length of time of treatment and convalescence so great that serious apprehension was felt. Many blamed the arsenical, and great pressure was brought to bear to reduce the dose or even cut it out altogether ; such a procedure meant delay in, or even failure of, cure, and was strongly resisted. The explanation seemed very unlikely, since treatment had been altered in no way. Eventually it was shown quite clearly that a very careful aseptic technique in the taking of specimens of blood and in the giving of intravenous injections reduced the incidence to normal proportions. It is now tolerably certain that the condition was due to a virus which was not destroyed by ordinary methods of sterilizing syringes but only by prolonged boiling and eliminated by aseptic technique even more rigid than a surgeon would employ for an abdominal operation. So was solved a problem that caused much worry and a great deal of discussion, not to mention a lot of ill-informed criticism, and today the condition is less common that it was before 1939. The introduction of penicillin has decreased the demand for arsphenamines, and in fact these drugs have been almost eliminated from the treatment in some clinics. Nevertheless, there can be little doubt that a single course of penicillin alone does not constitute the optimum treatment of early syphilis, though the addition of bismuth considerably reduces the percentage of failures.

Sociology

The sociological aspects of venereal disease have not received the same attention in Britain as they have in America. Nevertheless they have, since 1939 at any rate, been considered of primary importance in the Army. First, it must be remembered that a large proportion of recruits were drafted into the Armed Forces and, within a year or so and at an early age, were sent abroad to countries where customs differed greatly from those to which they had been accustomed. Not only this, but they were removed from the shelter of their own homes and the control of their parents to a community life where temptations were often great and where bad influences might lead them astray; the girl friend to whom many were faithful was missing, and those weaker ones who stood in need of motherly love and affection easily turned to the lady of easy virtue or the blatant prostitute. Moreover many of these lads had money to burn, time on their hands, and no hobby to occupy their minds, and so they fell an easy prey.

Every soldier was given instruction in the dangers of promiscuity, in the nature of venereal disease, and in methods of prophylaxis. But much more than this was done. Every effort was made to keep the soldier's mind off sex matters, to interest him in methods of amusing himself, to provide him with the means of enjoying sport of all kinds, and to furnish entertainments, concerts, cinemas, and books; but obviously in a theatre of war it took time to organize these facilities, and even then many were necessarily only improvisations.

The concealment of venereal disease has always been a military offence, and men were always encouraged to report sick at the earliest possible moment; penalties, as had already been said, were finally abolished. Treatment facilities, once the service had been thoroughly organized, were of the best, and patients were not made to feel inferior to those suffering from other conditions.

Great importance was attached to seeking the sources of infection; at home a fair amount of success was obtained, but it must be remembered that even here the soldier was often a stranger in the place where he was stationed whereas abroad he was invariably so. In addition venereal disease was usually contracted after dark, so that it is not surprising that the tracing of contacts was not more effective. One of the great problems at home was the "good time girl" who frequented the vicinity of military camps and in the towns was always on the look out for the soldier who welcomed female companionship; abroad the position was far worse; the local inhabitants knew the good nature of the British soldier, that he had money to spend, and, what is more, that he had access to plenty of cigarettes, sweets, and other luxuries which were often unobtainable in a country which had been overrun by the enemy. There were many women in such distress that they would sell themselves for a loaf of bread or a tin of bully beef.

The incidence of venereal disease in a unit, whether it be a battalion, a brigade, a division, or an army, is very largely a reflection of the prevalence of venereal disease in the civilian population. Wherever troops are more or less static, efforts to find and treat local sufferers will be profitable. Unfortunately it was rarely practicable for this to be carried out by the military authorities, and in few places was it possible to persuade the local authorities to take effective action. Nevertheless I believe if our commanders had been more insistent on this aspect of the problem fewer infections would have occurred. No doubt the subject often presented great difficulties. For political reasons it was often necessary to avoid giving offence to those whom it was wise to propitiate, and in most places neither the staff nor the hospitals and drugs were available. Everywhere brothels were placed out of bounds; the question of closing them rarely arose because, whether our men were fighting in France, Italy, Egypt, or elsewhere, the matter was one for the local authorities; the prevention of contact with clandestine prostitutes was more difficult because these ladies usually roamed the streets after dark and it was impossible to keep British soldiers in billets or camps after sundown if they were off duty.

At home the larger towns, and particularly London, presented the greatest problems; little could be done beyond employing military police and trying to obtain the collaboration of the civil police, who invariably proved very helpful; even these latter could do little, because the law gives them little power. Defence Regulation 33B brought a fair number of infected persons under treatment, but the difficulty of obtaining the desired information was too great for it to accomplish much.

There can be no doubt that the known case of venereal disease in the British Army almost invariably received adequate treatment, though occasionally it was not optimum owing to the exigencies of war, and the numbers of cases which escaped detection must have been relatively very small, so that it seems probable that the number of persons returning to civil life in a contagious stage was probably also small. I do not think the Army authorities can be blamed for the increase of venereal disease at home which followed the end of the war. Soldiers under treatment or observation for venereal disease on demobilization were strongly advised to

go to the most convenient civil centre and with their permission the local M.O.H. was informed. Moreover each man was provided with a modified Form V 15 so that the civilian medical officer would have all the necessary information. Much of course depended on the man himself, as no compulsion could be exercised.

That there would be a good deal of venereal disease in the troops occupying Western Germany was a foregone conclusion, for obvious reasons, but the incidence, though high at first, was far lower than in the Army of the Rhine after the 1914-18 war.

Much could be, and has been written about the psychology of the soldier who contracts venereal disease ; but, as has been said, it is the " aggressive " and " dependent " types who appear to be most prone ; the period of service is too short and conditions in war preclude any effective action to deal with these types ; in fact such action should have been taken long before they joined the service. One somewhat disturbing feature was the proportion of married men who became infected ; this, taken in conjunction with the number of soldiers' wives who contracted venereal disease whilst their husbands were away from home, appears to confirm other evidence that the general standard of morality has fallen considerably in the last decade. How far religion, or rather irreligion, is involved it is hard to say, but in one survey where sufferers were classified according to their sects the Roman Catholics and Presbyterians, presumably the most religious sections, showed the highest incidence ; though that is not to say that the same would have been true everywhere. The Royal Army Chaplains Department were co-operative and helpful throughout the war, but it was clear that many of the younger chaplains had neither the knowledge, experience, or training to fit them to deal with the problem competently, though their dealings with the sick and wounded were beyond praise.

Increase of venereal disease in time of war, both in the services and in civil life, is inevitable so long as human nature remains what it is. Nothing short of a mass religious revival and a marked improvement in the general code of morals will bring about any very great reduction in venereal disease, but statistics show that the British Army emerged from the war with an incidence that compared very favourably with any other army, and this is a tribute to both the individual and the authorities.

The foregoing is but a brief survey of venereal disease as it occurred before and during the late war ; much has been omitted, and figures, statistics, and detail have been practically eliminated because they do not appeal to the average reader and can be found in published documents and in the official history of the war. If I have given an outline of venereology in recent times, of the way problems were tackled, of the difficulties encountered, and of the success obtained, I shall have achieved my object in writing this article. Only time will prove whether the returning soldier has passed syphilis to his wife and children to any great extent, and whether many soldiers will ultimately develop such serious late effects as tabes and general paralysis of the insane ; but I do not believe that this will be the case.